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COMMUNICATIONS

Physician Specialist Growth into the 21st Century

David A. Kindig, M.D., Ph.D., and Nancy Cross Dunham

Physician manpower policies of the 1970s in the United States were primarily concerned with the geographic distribution and specialty composition of physician supply; current issues primarily focus on the overall number of physicians and the costs of medical practice and graduate medical education. The diffusion of physicians into rural areas has reduced the concern about geographic distribution (1), even though shortages in certain urban and rural areas are expected to last through the 1990s (2). The increase in the total physician supply has not had a similar positive effect on achieving a better balance between physicians in the primary care specialties and those in other specialties. However, there appears to be a sense among medical educators that the increase in the total physician supply and the previous increases in family practice and primary care residencies will also result in gradual diffusion of physicians into primary care and that a proper balance will be achieved.

Using supply assumptions of the Graduate Medical Education National Advisory Committee (3), the authors of the present paper have projected the growth in the physician supply to the point at which the physician-to-population ratio is expected to reach a maximum. It is estimated that this point will be reached between the years 2010 and 2020, when the supply of physicians will approximate 720,000, and the physician-to-population ratio will approach 300 per 100,000. In 1980, data of the American Medical Association Physician Masterfile indicated that 38.8 percent of the practicing physicians in this country were in the primary care specialties of family practice, internal medicine (excluding subspecialties), and pediatrics. Steinwachs and colleagues (4) have demonstrated that, while 57.5 percent of recent medical school graduates accepted entry level residency positions in primary care, only 31.8 percent eventually entered primary care practice. Figure 1 illustrates the impact of these percentage changes

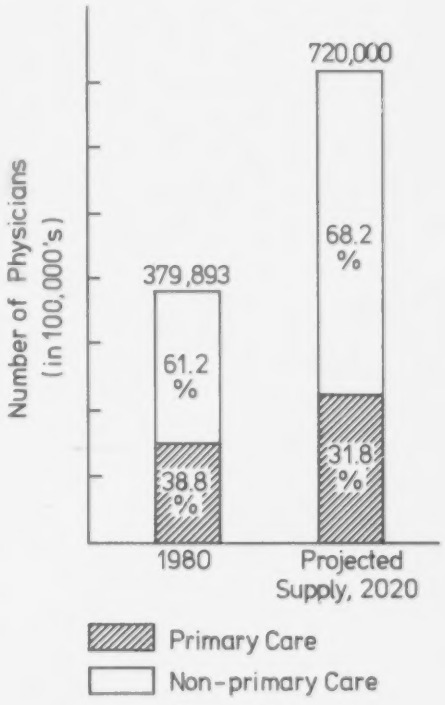

FIGURE 1

Number and specialty distribution of U.S. physicians in 1980 and authors' projections for 2020.

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For related editorial, see page 572.

on the total physician supply in 2020. Based on these assumptions, the absolute number of primary care physicians will increase by 81,000, or 55 percent, while the absolute number of physicians in other specialties will increase by 260,000, or 111 percent.

The specialty with the greatest opportunity for change is internal medicine. The data by Steinwachs (4) also show that, while 90 percent of physicians entering graduate medical education in family practice eventually enter primary care practice, only 38 percent starting graduate education in internal medicine enter practice in general internal medicine. The remainder, the data show, go into the medical subspecialties. This is identical with the 62 percent rate of subspecialization in internal medicine reported by Schleiter and Tarlov (5).

There is still debate over whether the 140,000 physician surplus projected by the Graduate Medical Education National Advisory Committee will be realized, given reductions in medical school class sizes, the aging of the population, the decline in physician productivity, and the increasing number of women in medicine (6). It is possible that the health care system may need the additional 81,000 primary care physicians that the authors estimate will be added by 2020. In light of the current regulatory and competitive approaches to cost containment, it is much more difficult to assume a need or demand for the additional 260,000 physicians in other specialties.

The public and private sectors should begin now to seek changes in graduate medical education and the physician reimbursement system so that some correction can be made while the total supply of physicians is still growing. Areas to consider are: state or federal grants to hospitals to convert residency training positions in other specialties to those in primary care, continued state and federal support for family practice and primary care residencies, changes in physician payment mechanisms through relative value scales or limited increases in payments to specialists to narrow the gap of compensation between primary care and specialist physicians, further reductions in the undergraduate pool, and restrictions on U.S. citizens studying medicine abroad. Failure to take some action will likely result in stringent and unwanted governmental regulatory approaches in the coming decades, such as assignment of number and types of residencies in a state or an individual hospital.

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DATAGRAM

Faculty Perceptions of Current Clinical Evaluation Systems

As part of the Association of American Medical Colleges (AAMC) Clinical Evaluation Program, an overview of the Self-Assessment of Clinical Evaluation Systems Project was made available to everyone at the AAMC Annual Meeting in November 1983. The purpose of the self-assessment project was to provide to medical schools materials that assist in examining and improving their systems of clinical evaluation. A survey instrument within the project overview requested information from the faculty members regarding (*a*) reactions to various characterizations of evaluation systems, (*b*) concerns about the evaluation of medical students, and (*c*) institutional and departmental reviews of clinical evaluation policies and procedures.

A total of 490 persons from 122 U.S. medical schools, 16 Canadian medical schools, and 69 affiliated teaching hospitals returned the survey instrument between November 1983 and June 1984. Not all respondents answered every question. Responses were received from persons in internal medicine, obstetrics-gynecology, pediatrics, psychiatry, surgery, family medicine, anesthesiology, emergency medicine, laboratory medicine, neurology, ophthalmology, otolaryngology, physical medicine and rehabilitation, radiology, and medical education.

Respondents were asked to react to six statements and indicate whether each statement accurately described the clinical evaluation systems at their respective institution. Results from 396 persons from 122 U.S. and 14 Canadian medical schools are presented in Table 1. However, calculation of percentages was based upon the total number of U.S. and Canadian medical schools, 127 and 16 respectively.

A majority of the respondents (71.0 percent) described their evaluation systems as uneven across departments and clinical training sites. There was general agreement (57.3 percent) that although their system works well for evaluating most students, it does not respond adequately to all evaluation situations, such as the marginal or failing student. Respondents from a little over a third of the U.S. medical schools and nearly half of the Cana-

TABLE 1

Endorsements of Six Statements Describing Clinical Evaluation Systems by 396 U.S. and Canadian Medical School Respondents, 1983–1984

Statement on Systems	Respondents		Medical Schools Represented by Respondents: U.S. (n = 127)		Medical Schools Represented by Respondents: Canadian (n = 16)	
	No.	Percent	No.	Percent	No.	Percent
Is uneven from department to department, site to site	281	71.0	114	89.8	13	81.3
Works well but not designed to handle some specific situations, which are solved ad hoc	227	57.3	98	77.2	11	68.8
Works quite well for majority of students and faculty members	196	49.5	93	73.2	8	50.0
Is "nominal"–works quite differently in practice than in theory	60	15.2	48	37.8	5	31.3
Requires a major overhaul	78	19.7	46	36.2	7	43.8
Unique and innovative	34	8.6	27	21.3	5	31.3

TABLE 2

Concerns Raised About the Clinical Evaluation of Medical Students by 428 U.S. Medical School, Canadian School, and Teaching Hospital Respondents, 1983–84

Concern	No. of Times Listed by Respondents			
	Respondents	Institutions Represented by Respondents		
		U.S. Medical Schools ($n = 122$)	Canadian Medical Schools ($n = 14$)	Teaching Hospitals ($n = 43$)
Lack of reliability of evaluations/lack of uniform evaluations between training sites, evaluators, and departments	68	44	4	5
Lack of objectivity of evaluations	66	43	3	9
Difficulty evaluating one or more specific clinical abilities	57	39	4	3
Deciding on uniform criteria/acceptable standards of performance	53	36	5	4
Difficulty evaluating noncognitive areas	36	27	4	2
Lack of validity/accuracy of evaluations	35	22	2	7
Inadequate time for faculty to get to know students well enough to collect adequate data for evaluations	34	22	2	6
Training/motivating evaluators	34	21	4	4
Lack of timely, meaningful feedback to students	31	23	2	3
Making proper use of evaluations	23	17	2	3
Early identification of the failing student	23	18	2	0
Defining objectives of training program for evaluation	19	15	1	2
Lack of direct observation of clinical performance	18	13	1	3
Deciding on content of evaluation	17	15	0	1
Difficulty evaluating clinical competence/ensuring minimal competence	17	12	1	2
Proper handling of students at the extremes	15	13	1	1
Inadequate methods of evaluation	14	10	2	2
Lack of correlation between clerkship and future clinical performances/lack of predictive power of evaluation	13	12	0	1
Discriminating between students in the average range	12	9	0	3
Documenting unsatisfactory performance/reluctance to give a poor evaluation	10	7	0	1
Overemphasis on cognitive knowledge	7	7	0	0
Lack of integration of evaluation information/integration of knowledge, skills, and attitudes to produce comprehensive evaluation	7	6	0	1
Evaluating long-term student progress over the course of the training program	5	2	1	2
Difficulty evaluating cognitive knowledge	5	4	0	1
Difficulty evaluating cognitive skills	3	2	0	1
Failure of faculty to conduct evaluations	1	0	0	1
Need for subjective/objective balance in evaluations	1	1	0	0
Determining relative weight of each of the various areas being evaluated	1	1	0	0

dian schools agreed that their systems required a major overhaul. By contrast, persons from a fifth of the U.S. schools and close to a third of the Canadian schools indicated they had rather unique and innovative evaluation systems in place.

The respondents were also asked to write in the single issue that they considered to be the most pressing in regard to the evaluation of medical students during their clinical education. The data from 428 persons from 122 U.S. medical schools, 14 Canadian medical schools, and 43 teaching hospitals are displayed in Table 2. The items are listed in the table according to the frequency that they were mentioned. The most frequently voiced concerns were issues relating to quality of assessment (reliability, objectivity, uniformity, validity, and feasibility of evaluating certain content areas). Another major category was that of concern with the process itself, that is, the training and involvement of evaluators, proper feedback to students, definition of objectives, and effective use of evaluations.

A total of 348 persons provided usable responses to the question of whether there had been an institutional and/or departmental review of the clinical evaluation policies and procedures during the past five years (1979–1983). Their responses, summarized by medical school and clinical department, are presented in Table 3. A total of 130 persons from 76 medical schools and 198 persons from 185 clinical departments stated that reviews of their systems of clinical evaluation had been conducted during this period.

A breakdown by date and level of review (by the medical school or clinical department) shows that a majority of the reviews were conducted in 1983 or were in progress at the time of the completion of the questionnaire. At the medical school level, 29 reviews were reported in 1983 compared with 21 that took place during the previous four years combined. The distribution of reviews which took place at the departmental level during the same five years displays a similar pattern: in 1983, 52 departments reviewed their evaluation systems, whereas during the previous four years, a total of 59 departments conducted such reviews. However, respondents representing 49 clinical departments and 10 medical schools indicated no deliberate review had been undertaken at all during this time, and respondents from six clinical departments indicated they did not know whether any review had been conducted.

Actions taken as a result of the reviews that had occurred at either the institutional or departmental level are displayed in Table 4. Actions or consequences fell into three groups. The first included changes made in the formal aspects of the evaluation system: procedures, instruments, program content, grading system, documentation, criteria, objectives, and evaluation content. The second category contained personnel-related actions: working with the faculty to increase awareness and feedback, forming committees to address evaluation problems, and increasing feedback to students. The third group contained general statements regarding general outcomes of the review: problems identified but no improvements made, evaluation system deemed adequate but no changes made, evaluation system revised until faculty satisfied, and major deficiencies discovered and corrected.

The actions most often cited by the re-

TABLE 3

Status of Reviews of Clinical Evaluation Policies and Procedures at 86 Medical Schools and 240 Clinical Departments as Reported by 348 Respondents, 1983–84

Status of Review	Medical School	Clinical Department
Performed in 1983	29	52
Performed in 1982	11	29
Performed in 1979, 1980, or 1981	10	30
In progress	19	39
Conducted periodically	6	25
Year unknown	1	10
Unaware if conducted	0	6
None	10	49

TABLE 4

Actions Taken or Consequences Cited as Reported by Respondents at Medical Schools or Clinical Departments Following Review of Evaluation Policies and Procedures, 1983–84*

Review Outcomes	No. of Times Reported
Actions addressing formal aspects of system	
Changed procedures/methods for conducting evaluations	61
Changed/revised evaluation instruments	61
Attempted to standardize evaluations	24
Changed curriculum/program	19
Changed/revised grading system	18
Made unspecified minor changes in evaluation system	17
Changed/improved documentation of student performance	15
Changed/defined criteria used for evaluations	14
Changed/defined objectives of training program	7
Changed content of evaluation	5
Personnel-related actions	
Increased faculty awareness/understanding of evaluation system issues, problems, and procedures	16
Increased feedback to students	14
Formed committee to address issues of evaluation	11
Increased feedback to faculty	5
General outcomes	
Documented deficiencies but no changes or improvements made	36
Evaluation system found to be adequate/no changes made	3
Evaluation system revised until faculty satisfied	1
Major deficiencies discovered/corrected	1

* Number of respondents = 384. Respondents were free to cite more than one action. The responses of seven persons could not be classified into the three groups and thus are omitted from the table.

spondents fell into the first group, which dealt with changes made in the formal aspects of the clinical evaluation system. For example, changes in procedures and in evaluation instruments were each mentioned 61 times.

Actions in the personnel-related category were fewest in number. The most popular item was mentioned only 16 times. Since persons have to be committed to the evaluation process for the formal aspects of the system to function smoothly and efficiently, more attention to the personnel-related actions could be expected.

The most frequently related general outcome was that problems had been identified but no subsequent action was taken. Thirty-six respondents indicated that this was the case.

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